OIPE JC13 JUL 19 2004 PATENT & TRADEMARK OFFICE

#116

Our Docket No.: 0325.00346

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
JUL 21 2004
Technology Center 2600

In re Application of:

Applicant:	Pankaj K. Jha		
Application No.:	09/535,890	Examiner:	George, K.
Filed:	March 27, 2000	Art Group:	2663

For: HYBRID DATA TRANSPORT SCHEME OVER OPTICAL NETWORKS

CERTIFICATE OF MAILING

I hereby certify that this letter, the response or amendment attached hereto are being deposited with the United States Postal Service as first class mail in an envelope addressed to Mail Stop Appeal Brief Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on July 14, 2004.

By: Jan M. Dunbar
Jan M. Dunbar

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant submits, in triplicate, the following Appeal Brief pursuant to 37 C.F.R. §1.192 for consideration by the Board of Patent Appeals and Interferences. Appellant also submits herewith a PTO-2038 Form in the amount of $330.00 to cover the cost of filing the opening brief as required by 37 C.F.R. §1.17(c). Please charge any additional fees or credit any overpayment to our Deposit Account Number 50-0541.

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST

The real party in interest is the Assignee, Cypress Semiconductor Corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to the Appellant, Appellant's legal representative, or Assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-3, 5-10 and 13-23 are pending and remain rejected. The Appellant hereby appeals the rejection of claims 1-3, 5-10 and 13-23.

IV. STATUS OF AMENDMENTS

Appellant is appealing a final Office Action issued by the Examiner on January 20, 2004. On March 17, 2004, Appellant filed an Amendment After Final. On April 20, 2004, the Examiner issues an Advisory Action indicating that the Amendment After Final changes would not be entered. On May 19, 2004, Appellant filed a Notice of Appeal based on the last set of claims prior to the Amendment After Final.

V. SUMMARY OF INVENTION

The present invention concerns an apparatus 106 (FIG. 10) generally comprising and interface connectable to a network 104 (interfaces between devices 106a-n and OC-Ne SONET ring

104 in FIG. 10.) The devices 106a-n generally implement a Hybrid Data Transport (HDT) protocol generally described on page 23, line 20 to page 25, line 2 of the specification. The interface may be configured to generate a frame 200 (FIG. 11) transmitted on the network 104. The frame 200 may be configured to store one or more data packets (PPP, IP, Frame Relay, etc. shown in FIG. 11) in a plurality of channels (FIGS. 12 and 13). Details of the data packets in the frames 200 may be found on page 26 lines 2-21 of the specification. Spreading of the data packets over available space inside a SONET/SDH frame uses encapsulation 210 around a payload 212 as discussed on page 27, lines 14-20 of the specification and illustrated in FIG. 12. A first of the plurality of channels is generally configured to store at least one of two or more fragments (FIG. 13) of the one or more data packets. Fragments are generally discussed on page 28, line 1 through page 29, line 3 of the specification. An example Packet Fragment 1 linked to a Packet Fragment 2 is illustrated in FIG. 13.

VI. ISSUES

The first issue is whether claims 13-19 are patentable under the 35 U.S.C. §112, first paragraph, written description criteria.

The second issue is whether claims 1, 3-8, 13-18 and 20-23 are patentable under 35 U.S.C. §102(e) over Russell et al., U.S. Patent No. 6,584,118 (hereafter Russell).

The third issue is whether claims 2 and 10 are patentable under 35 U.S.C. §103(a) over Russell.

The fourth issue is whether claims 9 and 19 are patentable under 35 U.S.C. §103(a) over Russell in view of Ramfelt et al., U.S. Patent No. 5,946,315.

VII. GROUPING OF CLAIMS

Appellant contends that the claims of the present invention do not stand or fall together. In particular, the following groups of claims are separately patentable:

Group 1: Claims 1, 3, 8 and 9 stand together.

Group 2: Claims 13, 18 and 19 stand together.

Group 3: Claims 20 and 21 stand together.

Group 4: Claim 5 stands alone.

Group 5: Claim 6 stands alone.

Group 6: Claim 7 stands alone.

Group 7: Claim 14 stands alone.

Group 8: Claim 15 stands alone.

Group 9: Claim 16 stands alone.

Group 10: Claim 17 stands alone.

Group 11: Claim 22 stands alone.

Group 12: Claim 23 stands alone.

Group 13: Claims 2 and 10 stand together.

The claim(s) in each group is(are) separately patentable from the claim(s) in any other groups.

VIII. ARGUMENTS

A. 35 U.S.C. §112

1. Groups 2, 7, 8, 9 and 10 (claims 13, 14, 15, 16, 17, 18 and 19) are patentable under 35 U.S.C.§ 112, first paragraph

The Examiner rejected claim 13 under 35 U.S.C. §112, first paragraph, written description requirement asserting, "There does not appear to be any support in the specification for two or more channels separated by at least one channel" per claim 13.[1] Claims 14-19 appear to be rejected by dependency to claim 13. In contrast, FIG. 12 of the application illustrates "packet fragmentation across fixed bandwidth channels in accordance with the present invention."[2] A fragmented payload 212 is illustrated in FIG. 12 spanning three fixed bandwidth channels with fragments in the first and third channels (two or more channels) separated by the second channel (separated by at least one channel). One of ordinary skill in the art viewing FIG. 12 and the associated text of the application quoted above would understand that the Applicant had possession of the claimed invention at the time the application was filed. As such, claims 13-19 are fully compliant with 35 U.S.C. §112, first paragraph, and the rejection should be reversed.

---

[1] Office Action, January 20, 2004, page 2, section 4, lines 5-6.

[2] Application, page 27, lines 2-3.

B. **35 U.S.C. § 102**

The Federal Circuit has stated that "[t]o anticipate, *every element and limitation* of the claimed invention must be found in a single prior art reference, *arranged as in the claim.*"[3] (Emphasis added). The Federal circuit has added that the anticipation determination is viewed from one of ordinary skill in the art: "There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention."[4] Furthermore, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."[5]

1. Group 1 (claims 1, 3, 8 and 9) is patentable over Russell

The group 1 claims provide generating a frame configured to store one or more data packets in a plurality of channels, wherein a first of the channels is configured to store at least one of two or more fragments of the data packets. In contrast, Russell appears to be silent regarding fragmenting **data packets**. In particular, the Examiner asserted that (i) the claimed plurality of channels are similar to the SDH virtual containers, (ii) the claimed frame is similar to an Ethernet frame and (iii) the claimed data packet is similar to an IP packet in the Ethernet frame.[6] However,

---

[3] *Brown v. 3M*, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) citing *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001); *Scripps Clinic & Research Found. v. Genentech Inc.*, 927 F.2d 1565, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991).

[4] *Scripps Clinic & Research Found. v. Genentech Inc.*, 927 F.2d 1565, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991).

[5] *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, USPQ2d 1051, 1053 (Fed Circ. 1987).

[6] Office Action, January 20, 2004, page 3, section 7.

no evidence was provided that a bit stuffing process of Russell used on an Ethernet frame causes the IP packet inside to be fragmented as understood by one of ordinary skill in the art. Therefore, Russell does not appear to disclose or suggest generating a frame configured to store one or more data packets in a plurality of channels, wherein a first of the channels is configured to store at least one of two or more fragments of the data packets as presently claimed.

Furthermore, the Examiner asserted that a bit stuffing process of Russell fragments Ethernet data.[7] In contrast, the Federal Circuit has stated:

> There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *Scripps Clinic & Research Found. V. Genentech Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991).

One of ordinary skill in the art would not appear to consider a bit stuffing process to be the same as a fragmentation process. For example, the web site "Searchnetworking.techtarget.com" provides the following definitions for "bit stuffing" and "fragmentation":

> In telecommunication, bit stuffing is the addition of a small number of binary digits to a transmission unit in order to fill it up to a standard size or to help synchronize signaling rates between points in a network. The receiver knows how to detect and remove or disregard the stuffed bits.
>
> In TCP/IP, fragmentation refers to the process of breaking packets into the smallest maximum size packet data unit (PDU) supported by any of the underlying networks. In the Open Systems Interconnection (OSI) reference model, this process is known as segmentation.

Therefore, bit stuffing of Ethernet frames per Russell does not appear to disclose or suggest fragmenting data packets as presently claimed.

---

[7] Office Action, January 20, 2004, page 3, section 7, lines 6-7.

Furthermore, the Examiner admitted that Russell refers to the process in FIGS. 11-12 of Russell as "bit stuffing".[8] The Examiner further asserted that the "bit stuffing" process of Russell is actually a fragmentation process.[9] However, the Examiner provided no evidence that the process in FIGS. 11-12 of Russell would be considered a fragmentation process by one of ordinary skill in the art. Therefore, the Examiner has failed to establish that Russell discloses or suggests a first of a plurality of channels is configured to store at least one of two or more fragments of the data packets as presently claimed.

Furthermore, Applicant's representative respectfully traversed the assertion by the Examiner that IP packets are inherently fragmented.[10] Inherency requires certainty of results, not mere possibility (See, e.g., *Ethyl Molded Products Co. v. Betts Package, Inc.*, 9 U.S.P.Q. 2d 1001 (E.D.Ky 1988). See also, *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (C.C.P.A. 1981)). In contrast, the Examiner admitted that the IP packets "can be" fragmented, instead of must be fragmented.[11] Since, no certainty exists for fragmentation, the fragmentation is not inherent. In addition, MPEP §2112 states:

> "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy* 17 USPQ2d 1461, 1464, 1464 (Bd. Pat. App. & Inter. 1990)(emphasis in original)

---

[8] Advisory Action, April 20, 2004, page 2, line 6.

[9] Advisory Action, April 20, 2004, page 2, lines 5-6.

[10] Office Action, January 20, 2004, page 7, section 24, line 3.

[11] Office Action, January 20, 2004, page 7, item 24, line 3.

However, no evidence or reasoning was provided by the Examiner why inserting IP packets into Ethernet frames necessarily resulted in the IP packets being fragmented. The Examiner does not appear to have meet the burden to establish inherency of fragmentation. Therefore, the Examiner has not established that Russell discloses or suggests at least one of two or more fragments as presently claimed.

In summary, the Examiner has not established that Russell discloses or suggests fragmenting data packets and storing at least one of two or more data packet fragments in a first of a plurality of channels as presently claimed. As such, group 1 is fully patentable over the cited reference and the rejection should be reversed.

2. Group 2 (claims 13, 18 and 19) is patentable over Russell

The group 2 claims provide receiving and transmitting a plurality of frames each configured to store one or more data packets in a plurality of channels. The Examiner asserted that (i) the claimed plurality of channels are similar to the SDH virtual containers, (ii) the claimed frame is similar to an Ethernet frame and (iii) the claimed data packet is similar to an IP packet in the Ethernet frame.[12]

The group 2 claims further provide two or more of the plurality of channels are configured to store two or more fragments from a first of the one or more data packets, respectively. In contrast, Russell appears to be silent regarding fragmentation of data packets. Therefore, Russell does not appear to disclose or suggest that two or more of a plurality of channels are configured to

[12] Office Action, January 20, 2004, page 4, section 12, lines 1-6.

store two or more fragments from a first of one or more data packets, respectively, as presently claimed.

Furthermore, the Examiner asserted that a bit stuffing process of Russell fragments Ethernet data.[13] In contrast, the Federal Circuit has stated:

> There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *Scripps Clinic & Research Found. V. Genentech Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991).

One of ordinary skill in the art would not appear to consider a bit stuffing process to be the same as a fragmentation process. For example, the web site "Searchnetworking.techtarget.com" provides the following definitions for "bit stuffing" and "fragmentation":

> In telecommunication, bit stuffing is the addition of a small number of binary digits to a transmission unit in order to fill it up to a standard size or to help synchronize signaling rates between points in a network. The receiver knows how to detect and remove or disregard the stuffed bits.
>
> In TCP/IP, fragmentation refers to the process of breaking packets into the smallest maximum size packet data unit (PDU) supported by any of the underlying networks. In the Open Systems Interconnection (OSI) reference model, this process is known as segmentation.

Therefore, bit stuffing of Ethernet frames per Russell does not appear to disclose or suggest fragmenting data packets as presently claimed.

Furthermore, the Examiner admitted that Russell refers to the process in FIGS. 11-12 of Russell as "bit stuffing".[14] The Examiner further asserted that the "bit stuffing" process of Russell

---

[13] Office Action, January 20, 2004, page 4, section 12, lines 7-8.

[14] Advisory Action, April 20, 2004, page 2, line 6.

is actually a fragmentation process.[15] However, the Examiner provided no evidence that the process in FIGS. 11-12 of Russell would be considered a fragmentation process by one of ordinary skill in the art. Therefore, the Examiner has failed to establish that Russell discloses or suggests two or more of a plurality of channels are configured to store two or more fragments from a first o one or more data packets as presently claimed.

Furthermore, Applicant's representative respectfully traversed the assertion by the Examiner that IP packets are inherently fragmented.[16] Inherency requires certainty of results, not mere possibility (See, e.g., *Ethyl Molded Products Co. v. Betts Package, Inc.*, 9 U.S.P.Q. 2d 1001 (E.D.Ky 1988). See also, *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (C.C.P.A. 1981)). In contrast, the Examiner admitted that the IP packets "can be" fragmented, instead of must be fragmented.[17] Since, no certainty exists for fragmentation, the fragmentation is not inherent. In addition, MPEP §2112 states:

> "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy* 17 USPQ2d 1461, 1464, 1464 (Bd. Pat. App. & Inter. 1990)(emphasis in original)

However, no evidence or reasoning was provided by the Examiner why inserting IP packets into Ethernet frames necessarily resulted in the IP packets being fragmented. The Examiner does not appear to have meet the burden to establish inherency of fragmentation. Therefore, the Examiner

---

[15] Advisory Action, April 20, 2004, page 2, lines 5-6.

[16] Office Action, January 20, 2004, page 7, section 24, line 3.

[17] Office Action, January 20, 2004, page 7, section 24, line 3.

has not established that Russell discloses or suggests at least one of two or more fragments as presently claimed.

The group 2 claims further provide two or more of a plurality of channels separated by at least one of the channels. In contrast, Russell appears to be silent regarding channel separations between two channels transporting fragments of a data packet. Therefore, Russell does not appear to disclose or suggest two or more of a plurality of channels separated by at least one of the channels as presently claimed.

Furthermore, the assertion by the Examiner that Russell discusses Ethernet frames separated by at least one channel is moot:

> Russell et al. discloses that to carry an Ethernet 1 Gbits/s channel over a synchronous network, the Ethernet channel is mapped into 7 VC4 containers, each having a capacity of 139 Mbits/s. If the segmentation and reassembly scheme later described by Russell et al. caused the frames to be segmented over two or more virtual containers, then they would be separated by at least one channel.[18]

The claim language concerns a separation between the two channels (asserted similar to the SDH virtual containers of Russell) storing the data packet fragments (asserted similar to the IP data packets of Russell), not a separation between two frames (asserted similar to the Ethernet frames of Russell) storing the data packet fragments as argued by the Examiner. Therefore, Russell does not appear to disclose or suggest two or more of a plurality of channels separated by at least one of the channels as presently claimed.

Furthermore, the assertion that Russell discusses at least one channel separation appears to be a conclusory statement. The above quoted text from the Examiner does not explain why an Ethernet frame fragmented into two channels must expressly have at least one channel separation

---

[18] Office Action, January 20, 2004, page 4, section 12, lines 9-1.

between the fragments. Inherency does not appear to apply as one possible approach would be to place the fragments into adjoining VC4 channels (e.g., no separation). Therefore, Russell does not appear to disclose or suggest two or more of a plurality of channels separated by at least one of the channels as presently claimed.

In summary, the Examiner has not established that Russell discloses or suggest two or more of a plurality of channels configured to store two or more fragments from a first of one or more data packets, respectively, and two or more of a plurality of channels separated by at least one of the channels as presently claimed. As such, group 2 is fully patentable over the cited reference and the rejection should be reversed.

3. Group 3 (claims 20 and 21) is patentable over Russell

The group 3 claims provide steps for (A) transmitting a plurality of frames and (B) configuring each or the frames to store one or more data packets in a plurality of channels. The Examiner asserted that (i) the claimed plurality of channels are similar to the SDH virtual containers, (ii) the claimed frame is similar to an Ethernet frame and (iii) the claimed data packet is similar to an IP packet in the Ethernet frame.[19]

The group 3 claims further provide a step for configuring a first and a second of a plurality of channels to store one or more fragments of one or more data packets. In contrast, Russell appears to be silent regarding fragmentation of data packets. Therefore, Russell does not appear to disclose or suggest a step for configuring a first and a second of a plurality of channels to store one or more fragments of one or more data packets, as presently claimed.

---

[19] Office Action, January 20, 2004, page 4, section 12, lines 1-6.

Furthermore, the Examiner asserted that a bit stuffing process of Russell fragments Ethernet data.[20] In contrast, the Federal Circuit has stated:

> There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *Scripps Clinic & Research Found. V. Genentech Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991).

One of ordinary skill in the art would not appear to consider a bit stuffing process to be the same as a fragmentation process. For example, the web site "Searchnetworking.techtarget.com" provides the following definitions for "bit stuffing" and "fragmentation":

> In telecommunication, bit stuffing is the addition of a small number of binary digits to a transmission unit in order to fill it up to a standard size or to help synchronize signaling rates between points in a network. The receiver knows how to detect and remove or disregard the stuffed bits.
>
> In TCP/IP, fragmentation refers to the process of breaking packets into the smallest maximum size packet data unit (PDU) supported by any of the underlying networks. In the Open Systems Interconnection (OSI) reference model, this process is known as segmentation.

Therefore, bit stuffing of Ethernet frames per Russell does not appear to disclose or suggest fragmenting data packets as presently claimed.

Furthermore, the Examiner admitted that Russell refers to the process in FIGS. 11-12 of Russell as "bit stuffing".[21] The Examiner further asserted that the "bit stuffing" process of Russell is actually a fragmentation process.[22] However, the Examiner provided no evidence that the process in FIGS. 11-12 of Russell would be considered a fragmentation process by one of ordinary skill in

---

[20] Office Action, January 20, 2004, page 4, section 12, lines 7-8.

[21] Advisory Action, April 20, 2004, page 2, line 6.

[22] Advisory Action, April 20, 2004, page 2, lines 5-6.

the art. Therefore, the Examiner has failed to establish that Russell discloses or suggests two or more of a plurality of channels are configured to store two or more fragments from a first o one or more data packets as presently claimed.

Furthermore, Applicant's representative respectfully traversed the assertion by the Examiner that IP packets are inherently fragmented.[23] Inherency requires certainty of results, not mere possibility (See, e.g., *Ethyl Molded Products Co. v. Betts Package, Inc.*, 9 U.S.P.Q. 2d 1001 (E.D.Ky 1988). See also, *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (C.C.P.A. 1981)). In contrast, the Examiner admitted that the IP packets "can be" fragmented, instead of must be fragmented.[24] Since, no certainty exists for fragmentation, the fragmentation is not inherent. In addition, MPEP §2112 states:

> "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy* 17 USPQ2d 1461, 1464, 1464 (Bd. Pat. App. & Inter. 1990)(emphasis in original)

However, no evidence or reasoning was provided by the Examiner why inserting IP packets into Ethernet frames necessarily resulted in the IP packets being fragmented. The Examiner does not appear to have meet the burden to establish inherency of fragmentation. Therefore, the Examiner has not established that Russell discloses or suggests at least one of two or more fragments as presently claimed.

The group 3 claims further provide that a first of the fragments in the first channel is linked by an offset pointer to a second of the fragments in the second channel. Despite the assertion by the

---

[23] Office Action, January 20, 2004, page 7, section 24, line 3.

[24] Office Action, January 20, 2004, page 7, section 24, line 3.

Examiner, the pointer 905 in FIG. 9 of Russell appears to point to multiple Ethernet frames (asserted similar to the claimed frames) within the same VC4 container (asserted similar to the claimed channels).[25] No evidence or explanation was provided where Russell disclosed an offset pointer from a fragment of an IP packet (asserted similar to the claimed data packets) in one channel to another fragment of the IP packet in another channel. Therefore, the Examiner has not established that Russell discloses or suggests a first of the fragments in a first channel being linked by an offset pointer to a second of the fragments in a second channel as presently claimed.

The Examiner also asserted that the seven VC4 containers disclosed by Russell are inherently linked.[26] However, no basis in fact and/or technical reasoning to reasonably support the asserted inherency was provided as required by MPEP §2112. In contrast, seven VC4 containers may be (i) time multiplexed on a single ring in STS/OC-48 and faster systems without offset pointers and (ii) spatially multiplexed across multiple rings for STS-OC-12 and slower systems without offset pointers. Therefore, linking with offset pointers is not a certainty and thus not inherent.

Assuming, arguendo, that the VC4 channels are inherently linked (for which the Appellant's representative does not necessarily agree), the Examiner still did not address the claim language. The group 2 claims provide linking the fragments of data packets (asserted similar to the IP packets of Russell). In contrast, linking of the VC4 channels would appear to show linking of the claimed channels, not linking of data packet fragments. Therefore, the Examiner has not established that Russell discloses or suggests a first of the fragments in a first channel being linked by an offset pointer to a second of the fragments in a second channel as presently claimed.

---

[25] Office Action, January 20, 2004, page 4, section 12,lines 13-15.

[26] Office Action, January 20, 2004, page 8, section 26, last two lines.

In summary, the Examiner has not established that Russell discloses or suggest configuring a first and a second of a plurality of channels to store one or more fragments of one or more data packets and a first of the fragments in the first channel is linked by an offset pointer to a second of the fragments in the second channel as presently claimed. As such, group 3 is fully patentable over the cited reference and the rejection should be reversed.

4. Group 4 (claim 5) is patentable over Russell

Group 4 depends from the group 1 and thus contains all of the limitations of group 1. Consequently, the arguments presented above in support of the patentability of group 1 are incorporated hereunder in support of group 4.

The group 4 claim further provides that the frame comprises one or more offset locators configured to point to a next fragment of the two or more fragments of data packets. Despite the assertion by the Examiner, the text in column 9, lines 59-63 and FIG. 9, element 905 of Russell do not appear to concern fragments of data packets.[27] In particular, the cited text of Russell reads:

> The VC3 payload 903 into which the Ethernet data frames are inserted comprises 955 data traffic bytes, plus a single byte frame identification 904 and 36 bytes of pointers 905 which **point to the positions of the starts and ends of one or a plurality of Ethernet data frames** within the user data portion 903. (Emphasis added)

In contrast, the Examiner asserted that the Ethernet frames were similar to the claimed frame and the VC4 channels of Russell are similar to the claimed channels.[28] Thus, the pointers 905 of Russell (asserted part of the claimed channel) appear to be pointing to another frame. No evidence or

---

[27] Office Action, January 20, 2004, page 3, section 9.

[28] Office Action, January 20, 2004, page 3, section 7, lines 1-4.

explanation was provided where Russell discloses a pointer in an Ethernet frame (asserted similar to the claimed frame) pointing to a fragment of an IP packet (asserted similar to the claimed data packets) Therefore, Russell does not appear to disclose or suggest that a frame comprises one or more offset locators configured to point to a next fragment of two or more fragments of data packets as presently claimed. As such, group 5 is fully patentable over the cited reference and the rejection should be reversed.

5. Group 5 (claim 6) is patentable over Russell

Group 5 depends from the group 4 and thus contains all of the limitations of group 4. Consequently, the arguments presented above in support of the patentability of group 4 are incorporated hereunder in support of group 5.

The group 5 claim further provides a frame comprising one or more header locations configured to identify a next fragment of two or more fragments. Despite the assertion by the Examiner, column 9, lines 59-63 and FIG. 6, element 905 of Russell appear to show a structure different than as claimed.[29] In particular, FIG. 9 of Russell shows that the pointers 905 are part of a VC3 container (asserted similar to the claimed channels). The pointers 905 of Russell do not appear to be part of the Ethernet frames 901 or 902 (asserted similar to the claimed frame) as presently claimed. Therefore, Russell does not appear to disclose or suggest a frame comprising one or more header locations configured to identify a next fragment of two or more fragments as presently claimed. As such, group 5 is fully patentable over the cited reference and the rejection should be reversed.

---

[29] Office Action, January 20, 2004, page 4, section 9, lines 2-3.

6. Group 6 (claim 7) is patentable over Russell

Group 6 depends from the group 5 and thus contains all of the limitations of group 5. Consequently, the arguments presented above in support of the patentability of group 5 are incorporated hereunder in support of group 6.

The group 6 claim further provides a frame comprising one or more trailer locations each configured to identify either (i) an end of one or more offset locators or (ii) an end of one or more data packets. Despite the assertion by the Examiner, column 10, lines 9-12 of Russell appears to show a structure different than as claimed.[30] The cited text of Russell reads:

> In the example of FIG. 9, first pointer 906 points to an end of first Ethernet data frame 901, second pointer 907 points to a start of a second Ethernet data frame 902 and third pointer 908 points to an end of the second Ethernet data frame 902.

However, FIG. 9 of Russell shows that the pointers 906, 907 and 908 are part of a VC3 container (asserted similar to the claimed channels). The pointers 906, 907 and 908 of Russell do not appear to be part of the Ethernet frames 901 or 902 (asserted similar to the claimed frame) as presently claimed. Therefore, Russell does not appear to disclose or suggest a frame comprising one or more trailer locations each configured to identify either (i) an end of one or more offset locators or (ii) an end of one or more data packets as presently claimed. As such, group 6 is fully patentable over the cited reference and the rejection should be reversed.

---

[30] Office Action, January 20, 2004, page 4, section 9, lines 3-4.

7. Group 7 (claim 14) is patentable over Russell

Group 7 depends from the group 2 and thus contains all of the limitations of group 2. Consequently, the arguments presented above in support of the patentability of group 2 are incorporated hereunder in support of group 7.

The group 7 claim further provides data from each of a number of sources is dynamically allocated among a plurality of channels in response to bandwidth demands. Despite the assertion by the Examiner, column 10, lines 24-26 of Russell do not appear to discuss the claim language. The cited text of Russell reads:

> By including the pointers in a VC-3 or other virtual container, the system shown in FIG. 9 is scaleable with data rate, the number of pointers increasing as the data rate increases.

Nowhere in the above text does Russell discuss (i) a number of sources and (ii) **bandwidth** demands. Therefore, the Examiner has not established that Russell discloses or suggest data from each of a number of sources is dynamically allocated among a plurality of channels in response to bandwidth demands as presently claimed. As such, group 7 is fully patentable over the cited reference and the rejection should be reversed.

8. Group 8 (claim 15) is patentable over Russell

Group 8 depends from the group 2 and thus contains all of the limitations of group 2. Consequently, the arguments presented above in support of the patentability of group 2 are incorporated hereunder in support of group 8.

The group 8 claim further provides that after fragmentation, a first data packet comprises an offset locator configured to point to a next of one or more data packets storing a next fragment of two or more fragments. Despite the assertion by the Examiner, the text in column 10, lines 9-13 of

Russell does not appear to discuss data packets comprising offset locators.[31] The cited text of Russell reads:

> In the example of FIG. 9, first pointer 906 points to an end of first Ethernet data frame 901, second pointer 907 points to a start of a second Ethernet data frame 902 and third pointer 908 points to an end of the second Ethernet data frame 902. A minimum size of Ethernet data frame of 64 bytes may be incorporated and a minimum gap between Ethernet data frames of 120 bytes may be accommodated, at 100 Mbits/s.

However, the Examiner asserted that the IP packets of Russell were similar to the claimed data packets.[32] As such, neither the above cited text, or any other section of Russell appear to discuss IP packets having offset locators. Therefore, Russell does not appear to disclose or suggest that after fragmentation, a first data packet comprises an offset locator configured to point to a next of one or more data packets storing a next fragment of two or more fragments as presently claimed. As such, group 8 is fully patentable over the cited reference and the rejection should be reversed.

9. Group 8 (claim 16) is patentable over Russell

Group 9 depends from the group 8 and thus contains all of the limitations of group 8. Consequently, the arguments presented above in support of the patentability of group 8 are incorporated hereunder in support of group 9.

The group 9 claim further provides a next data packet comprising a header location configured to identify a next fragment. Despite the assertion by the Examiner, the text in column

---

[31] Office Action, January 20, 2004, page 5, section 14.

[32] Office Action, January 20, 2004, page 4, section 12, lines 3-5.

10, lines 9-13 of Russell does not appear to discuss data packets comprising header locations identifying fragments.[33] The cited text of Russell reads:

> In the example of FIG. 9, first pointer 906 points to an end of first Ethernet data frame 901, second pointer 907 points to a start of a second Ethernet data frame 902 and third pointer 908 points to an end of the second Ethernet data frame 902. A minimum size of Ethernet data frame of 64 bytes may be incorporated and a minimum gap between Ethernet data frames of 120 bytes may be accommodated, at 100 Mbits/s.

However, the Examiner asserted that the IP packets of Russell were similar to the claimed data packets.[34] As such, neither the above cited text, or any other section of Russell appear to discuss IP packets having header locations identifying fragments. Therefore, Russell does not appear to disclose or suggest a next data packet comprising a header location configured to identify a next fragment as presently claimed. As such, group 9 is fully patentable over the cited reference and the rejection should be reversed.

10. Group 10 (claim 17) is patentable over Russell

Group 10 depends from the group 9 and thus contains all of the limitations of group 9. Consequently, the arguments presented above in support of the patentability of group 9 are incorporated hereunder in support of group 10.

The group 10 claim further provides each of a first data packet and a next data packet comprising one or more trailer locations configured to identify either (i) an end of an offset locator or (ii) an end of the first data packet. Despite the assertion by the Examiner, the text in column 10,

---

[33] Office Action, January 20, 2004, page 5, section 14.

[34] Office Action, January 20, 2004, page 4, section 12, lines 3-5.

lines 9-13 of Russell does not appear to discuss data packets comprising trailer locations.[35] The cited text of Russell reads:

> In the example of FIG. 9, first pointer 906 points to an end of first Ethernet data frame 901, second pointer 907 points to a start of a second Ethernet data frame 902 and third pointer 908 points to an end of the second Ethernet data frame 902. A minimum size of Ethernet data frame of 64 bytes may be incorporated and a minimum gap between Ethernet data frames of 120 bytes may be accommodated, at 100 Mbits/s.

However, the Examiner asserted that the IP packets of Russell were similar to the claimed data packets.[36] As such, neither the above cited text, or any other section of Russell appears to discuss IP packets having trailer locations. Therefore, Russell does not appear to disclose or suggest each of a first data packet and a next data packet comprising one or more trailer locations configured to identify either (i) an end of an offset locator or (ii) an end of the first data packet as presently claimed. As such, group 10 is fully patentable over the cited reference and the rejection should be reversed.

11. Group 11 (claim 22) is patentable over Russell

Group 11 depends from the group 3 and thus contains all of the limitations of group 3. Consequently, the arguments presented above in support of the patentability of group 3 are incorporated hereunder in support of group 11.

The group 11 claim further provides a step for encapsulating each of one or more fragments of data packets with a header and a trailer. Despite the assertion by the Examiner, the text in column

---

[35] Office Action, January 20, 2004, page 5, section 14.

[36] Office Action, January 20, 2004, page 4, section 12, lines 3-5.

10, lines 9-13 of Russell does not appear to discuss data packets comprising trailer locations.[37] The cited text of Russell reads:

> In the example of FIG. 9, first pointer 906 points to an end of first Ethernet data frame 901, second pointer 907 points to a start of a second Ethernet data frame 902 and third pointer 908 points to an end of the second Ethernet data frame 902. A minimum size of Ethernet data frame of 64 bytes may be incorporated and a minimum gap between Ethernet data frames of 120 bytes may be accommodated, at 100 Mbits/s.

Nowhere in the above text, or in any other section, does Russell appear to discuss encapsulating data packet fragments. Therefore, Russell does not appear to disclose or suggest a step for encapsulating each of one or more fragments of data packets with a header and a trailer as presently claimed. As such, group 11 is fully patentable over the cited reference and the rejection should be reversed.

12 Group 11 (claim 23) is patentable over Russell

Group 12 depends from the group 3 and thus contains all of the limitations of group 3. Consequently, the arguments presented above in support of the patentability of group 3 are incorporated hereunder in support of group 12.

The group 12 claim further provides that a first channel and a second channel, storing fragments of data packets, are separated by at least one channel. In contrast, the assertion by the Examiner that Russell discloses separating Ethernet frames into difference VC4 channels such that the Ethernet frames are at least one VC4 channels apart is moot for arguing language not in the claim.[38] The claim provides two channels storing fragments of a data packet where the **two channels** (not frames within the channels) are separated by at least one channel. Furthermore, Russell appears

---

[37] Office Action, January 20, 2004, page 5, section 14.

[38] Office Action, January 20, 2004, page 5, section 16.

to be silent regarding storage of fragments in different channels. Therefore, Russell does not appear to disclose or suggest a first channel and a second channel, storing fragments of data packets, are separated by at least one channel as presently claimed. As such, group 12 is fully patentable over the cited reference and the rejection should be reversed.

35 U.S.C. § 103

"[T]o establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicants."[39] "[T]he factual inquiry whether to combine references must be thorough and searching."[40] "This factual question ... [cannot] be resolved on subjective belief and unknown authority."[41] "It must be based on objective evidence of record."[42] The Examiner must show that (a) there is some suggestion or motivation, either in the references or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, (b) there is a reasonable expectation of success, and (c) the prior art reference (or combination of references) teaches or suggests all of the claim limitations.[43] Furthermore, The Court

---

[39] *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) (citing *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)).

[40] *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001).

[41] *In re Lee*, 277 F.3d 1338, 1343-44, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

[42] *Id.* at 1343, 61 USPQ2d at 1434.

[43] Manual of Patent Examining Procedure (M.P.E.P.), Eighth Edition, Revised February 2003, §2142.

of Appeals for the Federal Circuit has indicated that the requirement for showing the teaching of motivation to combine references is "rigorous" and must be "clear and particular".[44]

1. Group 13 (claims 2 and 10) is patentable over Russell

Group 13 depends from the group 1 and thus contains all of the limitations of group 1. Consequently, the arguments presented above in support of the patentability of group 1 are incorporated hereunder in support of group 13.

The Examiner has asserted that it would have been obvious for one of ordinary skill in the art to modify Russell to meet the claims limitations of group 13.[45] However, no motivation to make the alleged modifications was provided. The fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness.[46] Furthermore, no evidence of a reasonable expectation of success for the proposed modifications was provided. Therefore, the Examiner has failed to establish *prima facie* obviousness for lack of evidence for (i) motivation and (ii) a reasonable expectation of success. As such, group 13 is fully patentable over the cited reference and the rejection should be reversed.

---

[44] *In re Anita Dembiczak* and *Benson Zinbarg*, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999)

[45] Office Action, January 20, 2004, page 6, sections 19 and 20

[46] M.P.E.P. Eighth Edition, Revised February 2003, §1243.01.

Groups 1-13 are separately patentable.

During prosecution, each independent and dependent claim is considered to be separately patentable over every other claim.[47] As such, each of the above groups is considered to be separately patentable over every other group.[48] In particular, each of the groups includes a unique combination of arguments that allow individual groups to stand over the references even if all of the other groups fall.

Group 2 includes an argument that Russell does not disclose or suggest two or more channels, storing fragments of data packets, are separated by at least one channel. Since group 1 does not depend on the separation argument, group 2 may be found patentable even if group 1 are not.

Group 3 includes an argument that Russell does not disclose or suggest an offset pointer linking two fragments. Since groups 1-2 do not depend on the offset pointer argument, group 3 may be found allowable even in group 1 and/or 2 are not.

Group 4 includes an argument that Russell does not disclose or suggest a frame comprising one or more offset locators. Since groups 1-3 do not depend on the frame offset locators argument, group 4 may be found patentable even if groups 1-2 and/or 3 are not.

---

[47] See, e.g., *Rowe v. Dror*, 42 USPQ2d 1550, 1552 (Fed. Cir. 1997), *Preemption Devices, Inc. v. Minnesota Mining and Manufacturing Company*, 221 USPQ 841, 843 (Fed. Cir. 1984), and *Jones v. Hardy*, 727 F.2d 1524, 1528, 220 USPQ 1021, 1024 (Fed. Cir. 1984) (It is well established that each claim in a patent constitutes a separate invention.).

[48] M.P.E.P., Eighth Edition, Revised February 2003, §1206.

Group 5 includes an argument that Russell does not disclose or suggest a frame comprising one or more header locations. Since groups 1-4 do not depend on the frame header location argument, group 5 may be found patentable even if groups 1-3 and/or 4 are not.

Group 6 includes an argument that Russell does not disclose or suggest a frame comprising one or more trailer locations. Since groups 1-5 do not depend on the frame trailer location argument, group 6 may be found patentable even if groups 1-4 and/or 5 are not.

Group 7 includes an argument that Russell does not disclose or suggest multiple sources. Since groups 1-6 do not depend on the multiple sources argument, group 7 may be found patentable even if groups 1-5 and/or 6 are not.

Group 8 includes an argument that Russell does not disclose or suggest a data packet comprising an offset locator. Since groups 1-7 do not depend on the data packet offset locator argument, group 8 may be found patentable even if groups 1-6 and/or 7 are not.

Group 9 includes an argument that Russell does not disclose or suggest a data packet comprising a header location. Since groups 1-8 do not depend on the data packet header location argument, group 9 may be found patentable even if groups 1-7 and/or 8 are not.

Group 10 includes an argument that Russell does not disclose or suggest a data packet comprising a trailer location. Since groups 1-9 do not depend on the data packet trailer location argument, group 10 may be found patentable even if groups 1-8 and/or 9 are not.

Group 11 includes an argument that Russell does not disclose or suggest a fragment encapsulation step. Since groups 1-10 do not depend on the fragment encapsulation step argument, group 11 may be found patentable even if groups 1-9 and/or 10 are not.

Group 12 includes an argument that Russell does not disclose or suggest both two or more channels, storing fragments of data packets, are separated by at least one channel and an offset pointer linking two fragments. Since groups 1-11 do not depend on both the at least one channel separation and the offset pointer arguments, group 12 may be found patentable even if groups 1-10 and/or 11 are not.

Group 13 includes an argument that there is no motivation to modify Russell. Since groups 1-12 do not depend on the motivation argument, group 13 may be found patentable even if groups 1-11 and/or 12 are not.

D. CONCLUSION

The cited reference does not expressly or inherently disclose fragmenting data packets, two channels storing fragments separate by at least one channel, pointers linking the fragments, header locations, trailer locations, multiple data sources and a fragment encapsulation step as recited in claims 1, 3-9, 13-19 and 20-23. Furthermore, no evidence of motivation or a reasonable expectation of success was provided to modify Russell to match claims 2 and 10. Hence, the Examiner has clearly erred with respect to the patentability of the claimed invention. It is respectfully requested that the Board overturn the Examiner's rejection of all pending claims, and hold that the claims are not rendered obvious by the cited reference. However, should the Board find the arguments herein

in support of independent claims 1, 13 and/or 20 unpersuasive, the Board is respectfully requested to carefully consider the arguments set forth above in support of each of the independently patentable groups.

Respectfully submitted,

CHRISTOPHER P. MAIORANA, P.C.

Christopher P. Maiorana
Reg. No. 42,829

Dated: July 14, 2004

24840 Harper Avenue
Suite 100
St. Clair Shores, MI 48080
(586) 498-0670

IX. APPENDIX

The claims of the present application which are involved in this appeal are as follows:

1. An apparatus comprising:

an interface connectable to a network, said interface configured to generate a frame transmitted on said network, said frame configured to store one or more data packets in a plurality of channels, wherein a first of said plurality of channels is configured to store at least one of two or more fragments of said one or more data packets.

2. The apparatus according to claim 1, wherein a second of said channels is configured to store only complete packets of said one or more data packets from a fixed bandwidth source.

3. The apparatus according to claim 1, wherein said network comprises a fiber optic network.

4. (CANCELLED)

5. The apparatus according to claim 1, wherein said frame comprises one or more offset locators configured to point to a next fragment of said two or more fragments.

6. The apparatus according to claim 5, wherein said frame further comprises one or more header locations configured to identify said next fragment.

7. The apparatus according to claim 5, wherein said frame further comprises one or more trailer locations each configured to identify either (i) an end of said one or more offset locators or (ii) an end of said one or more data packets.

8. The apparatus according to claim 1, wherein each of said plurality of channels comprises a fixed bandwidth channel.

9. The apparatus according to claim 1, wherein a payload portion of each of said one or more data packets is configured to be reloaded with a partial data load.

10. The apparatus according to claim 1, wherein each of said one or more data packets is selected from a group consisting of Internet Protocol packets, Packet-Over-SONET packets, Point-to-Point Protocol packets, Asynchronous Transfer Mode cell packets, G.702-based Plesiochronous Digital Hierarchy (T1/T3) packets, Spatial Reuse Protocol packets, and Frame Relay packets.

11. (CANCELLED)

12. (CANCELLED)

13. An apparatus comprising:

one or more nodes coupled to a network, each of said nodes configured to receive and transmit one or more of a plurality of frames each configured to store one or more data packets in

a plurality of channels, wherein (i) two or more of said channels are configured to store two or more fragments from a first of said one or more data packets, respectively, and (ii) said two or more channels are separated by at least one of said channels.

14. The apparatus according to claim 13, wherein data from each of a number of sources is dynamically allocated among said plurality of channels in response to bandwidth demands.

15. The apparatus according to claim 13, wherein after fragmentation, said first data packet comprises an offset locator configured to point to a next of said one or more data packets storing a next fragment of said two or more fragments.

16. The apparatus according to claim 15, wherein said next data packet comprises a header location configured to identify said next fragment.

17. The apparatus according to claim 16, wherein each of said first and said next data packets further comprise one or more trailer locations configured to identify either (i) an end of said offset locator or (ii) an end of said first data packet.

18. The apparatus according to claim 13, wherein each of said plurality of channels comprise fixed bandwidth channels.

19. The apparatus according to claim 13, wherein a payload portion of each of said one or more data packets is configured to be reloaded with a partial data load.

20. A method for transferring data, comprising the steps of:

(A) transmitting one or more of a plurality of frames;

(B) configuring each of said frames to store one or more data packets in a plurality of channels; and

(C) configuring a first and a second of said channels to store one or more fragments of said one or more data packets, a first of said fragments in said first channel being linked by an offset pointer to a second of said fragments in said second channel.

21. The method according to claim 20, wherein said offset pointer is transferred after said first fragment in said first channel.

22. The method according to claim 20, further comprising the step of:

encapsulating each of said one or more fragments with a header and a trailer.

23. The method according to claim 20, wherein said first channel and said second channel are separated by at least one of said plurality of channels.